

REMARKS

In view of the above Amendment, Applicants believe the pending application is in condition for allowance.

Claims 1-5 are pending in the present application. Claims 1-5 have been amended as a result of this response. Applicants respectfully submit that independent claims 1 and 2 and dependent claims 3-5 stand in condition for allowance. No claims have been canceled and no new claims have been added.

Claim Objections

Claim 1 was objected to for reciting “said compressor” where “said compressors” would have proper antecedent basis. Claims 1-5 have been amended to recite “at least one compressor.” Accordingly, reconsideration and withdrawal of this objection is respectfully requested.

Claim Rejections Under 35 U.S.C. § 103(a)

Claims 1-4 were rejected under 35 U.S.C. § 103(a) as being anticipated by Tanimoto et al (U.S. Patent No. 6,698,217 Tanimoto ‘217) in view of Shaw (U.S. Patent No. 4,497,185). This rejection is respectfully traversed.

Tanimoto ‘217 discloses a refrigeration apparatus, which can continue to operate as it is without inducing any degradation of performance of a compressor when one of multiple compressors is broken down. Specifically, the refrigeration apparatus includes a plurality of

compressors connected with each other. When a breakdown detecting device detects breakdown of one of the compressors, the refrigeration operation is performed by actuating other compressors. However, Tanimoto '217 is not concerned with providing a liquid injection passageway that is connected directly to the oil return passageway.

Shaw discloses an oil atomizing compressor working fluid cooling system for gas/vapor/helical screw rotary compressors (Abstract). After the lubricant separates from the working fluid, the lubricant is fed to an atomizing nozzle and "injected into the inlet end of the compressor" (Abstract). The atomizing nozzles (70) are mounted to the inlet end plate (44) of the helical screw rotary compressor (12) via line (68) (column 3, lines 40-45). The inlet of the compressor is flooded with a cloud type of cool atomized oil droplets uniformly dispersed within the suction vapor or gas entering compressor suction port (22) through suction passage (48) (Column 3, lines 60-64).

To clarify further, the oil return passageway (68, 68a) of Shaw is directly connected to the suction port (22), where the suction port allows the compressor to suck gas refrigerant, which is vaporized in the evaporator. Therefore the suction port (22) is **not** a port for supplying liquid refrigerant to the compressor separately from suction refrigerant (gas refrigerant). In Shaw, as oil is supplied from the nozzles (70) to the compressor by spraying, it is mixed with gas, that is, the gas refrigerant supplied from the port (22) to the compressor and the gas-mixed oil sprayed from the nozzles (70) to the port (22) are mixed. Shaw does not teach an oil or gas return passageway that is connected directly to said liquid injection passageway in which gas

refrigerant in oil or gas return passageway is mixed with said liquid refrigerant *prior* to injecting into the suction side of said compressors.

The present invention seeks to eliminate abnormal noise due to the intermixture of gas refrigerants *in the suction pipes* of the compressors and more specifically to prevent the occurrence of noise in the part where gas flow tubes join each other. The present invention is to connect the oil returning passageway and the gas injection passageway *directly* to the liquid injection passageway, through which liquid refrigerant flows, to allow liquid injection refrigerant to flow through the part where gases are mixed. The oil returning passageway and the gas injection passageway are not connected to the suction pipes in order to avoid abnormal noises in the part where the oil returning passageway and the suction pipes join (claim 1).

In the Final Office Action of April 4, 2008, the Examiner states that Tanimoto '217 does not explicitly teach the oil return passageway is connected directly to the liquid injection passageway and asserts that Shaw teaches this element. However, Shaw specifically states that the inlet of the compressor is flooded with a cloud type of cool atomized oil droplets uniformly dispersed within the suction vapor or gas entering compressor suction port (22) through suction passage (48) (Column 3, lines 60-64). To restate this another way, in Shaw, vapor or gas enters the compressor suction port (22) through suction passage (48) and then mixes with a cloud type of cool atomized oil droplets.

Tanimoto '217 and Shaw fail to teach or disclose an "oil return passageway is connected directly to said liquid injection passageway in which gas refrigerant in said oil return passageway is mixed with said liquid refrigerant prior to injecting into the suction side of said at least one compressor"

(claim 1). Also, Tanimoto '217 and Shaw fail to teach or disclose a "gas injection passageway is connected directly to said liquid injection passageway in which gas refrigerant in said gas injection passageway is mixed with said liquid refrigerant prior to injecting into the suction side of said at least one compressor" (claim 2).

Accordingly, for at least these reasons, claims 1 and are clearly distinguishable over Tanimoto '217 in view of Shaw. Applicants submit that claims 3 and 4 are allowable at least by virtue of their dependency on claims 1 and 2. Accordingly, reconsideration and withdrawal of this rejection is respectfully requested.

Rejection of Claim 5

Claim 5 was rejected under 35 U.S.C. § 103(a) as being anticipated by Tanimoto et al. (Tanimoto '217) in view of Shaw and further in view of Tanimoto et al (U.S. Patent Publication No. 2004/0112082 Tanimoto '082). This rejection is respectfully traversed.

Tanimoto '082 does not remedy the noted deficiencies of Tanimoto '217 in view of Shaw. Tanimoto '082 is only relied upon to teach dependent claim features. This reliance on Tanimoto '082 fails to make up for the deficiencies of Tanimoto '217 in view of Shaw discussed above with respect to independent claims 1 and 2. Therefore, the asserted combination of Tanimoto '217 in view of Shaw and in further view of Tanimoto '082 (assuming these references may be combined, which Applicants do not admit) fails to establish prima facie obviousness of any pending claim.

Applicants submit that claim 5 is allowable at least by virtue of its dependency on independent claims 1 and 2. Accordingly, reconsideration and withdrawal of this rejection is respectfully requested.

CONCLUSION

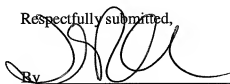
In view of the above remarks, it is believed that claims are allowable.

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact D. Richard Anderson, Reg. No. 40, 439 at the telephone number of the undersigned below, to conduct an interview in an effort to expedite prosecution in connection with the present application.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37.C.F.R. §§ 1.16 or 1.14; particularly, extension of time fees.

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Respectfully submitted,



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